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FIG. 3. Showing origin of setum from a single hypha.
FIG. 4. Portion of setum showing septae.
FIG. 5. Spores.
FIG. 6. A germinated spore (a); showing also one of the appressoria (b).

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## FUNGI SELECTI GUATEMALENSES. EXSICCATI DECADE II.*

W. A. KELLERMAN.

In this decade specimens of three new species (recently described in the Journal of Mycology) are presented, namely Aecidium byrsonimae Kern & Kellerman, Puccinia heliotropii Kern & Kellerman, and Uredo trixitis Kern & Kellerman; also species on heretofore unreported hosts are shown, as well as specimens exhibiting an extended range of the fungus. The species and their hosts are as follows:

11. Aecidium byrsonimae Kern and Kellerman on Byrsonima crassifolia (L.) H. B. K.
12. Balansia trinitensis Cooke & Massee on Panicum sp. indet.
13. Coleosporium plumierae Patouillard on Plumiera rubra L.
14. Puccinia conoclinii Seymour on Eupatorium rafaelense Coulter.
15. Puccinia heliotropii Kern and Kellerman on Heliotropium indicum L.
16. Puccinia purpurea Cooke on Sorghum vulgare Pers.
17. Puccinia tetramerii Seymour on Blechum brownei Juss.
18. Puccinia tithoniae Dietel & Holway on Tithonia tubaeformis Cass.
19. Uredo biocellata Arthur on Pluchea odorata Cass.
20. Uredo trixitis Kern and Kellerman on Trixitis frutescens P. Br.

### 11. Aecidium byrsonimae Kern & Kellerman

On Byrsonima crassifolia (L.) H. B. K.

Sierra de las Minas (Departamento Baja Verapaz), opposite El Rancho, alt. 615 m. 2050 ft.) Guatemala, C. A.
March 10, 1905.
W. A. Kellerman, No. 4325.

The published note concerning this Aecidium by Mr. Kern is as follows: An interesting species because of the hypertrophy it produces, the prominent subcuticular pycnia, and the long and numerous aecia, but especially on account of the very odd spores, which are exceedingly large, with coarsely marked thick walls, much thickened above. The characters of the pycnia and aecia are so unlike those of autoecious species on Malpighiaceae that it is assumed to be heteroecious. The fact that the pycnia are subcuticular indicates that it does not belong to the Uromyces-Puccinia group but to some genus of the Raveneliatae or Uropyxidatae. Both host and fungus of a specimen in the New York Botanical Garden, collected at Rancho Guerro, Jalisco, Mexico, June 15, 1892, by M. E. Jones, said to be on an Ericaceous host, agree perfectly with this Guatemalan specimen. Because of the long, bladdery peridia there is a resemblance to Peridermium, and the Mexican specimen has been so labeled, but there can now be no doubt that it belongs here.

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*Contributions to Guatemalan Mycology. V.

## 12. Balansia trinitensis Cook & Massee

On Panicum sp. indet.

Sierra del Mico, between Los Amates and Izabal, alt. 360 m. (1200 ft.), Depart. Izabal, Gautemala, C. A. February 23, 1907.

W. A. Kellerman, No. 6079.

This fungus was found in a single locality, a moist mountain ravine, infesting a dense clump of the large grass which for the most part had succumbed to the parasite. The material was submitted to Professor Atkinson for identification. This species was first detected in Trinidad, the host being Panicum palmifolium.

## 13. Coleosporium plumierae Patouillard

On Plumiera rubra L.

El Palmar, alt. 615 m. (2050 ft.), Depart. Quezaltenango, Guatemala, Central America. February 11, 1906.

W. A. Kellerman, No. 5460.

The material was placed in the hands of Frank D. Kern for identification; he reports as follows: This is the first time this species has been collected on the continent, the other collections coming from the West India Islands. The host has been identified by John Donnell Smith.

## 14. Puccinia conoclinii Seymour

On Eupatorium rafaelense Coulter.

Volcano Cerro Quemado, alt. 2700 m. (9000 ft.), Departmento Quezaltenango, Guatemala, C. A. February 8, 1906.

W. A. Kellerman, No. 5449.

The host was determined by J. M. Greenman; the Rust was identified by Frank D. Kern. The Rust has been collected in the United States on Eupatorium (Conoclinium) coelestinum and Eupatorium incarnatum, extending from Illinois to Louisiana; in Guatemala it was obtained on Eupatorium pycnocephalum and on the host named above.

## 15. Puccinia heliotropii Kern & Kellerman

On Heliotropium indicum L.

Gualán, alt. 122 m. (400 ft.), Dept. Zacapa, Guatemala, Central America. March 12, 1906.

W. A. Kellerman, No. 4326.

Host No. 4326 bears the type, of which material the specimen here issued is a part. The collection on host No. 4372 (determnied by John Donnell Smith), as stated by Mr. Kern also bears aecia which without doubt belong to an entirely distinct species of rust. The species here under consideration is of the ordinary leptopuccinia type. It differs from Puccinia heliotropicola Speg. by the longer and more oblong spores with a thickened apex.

## 16. Puccinia purpurea Cooke

On Sorghum vulgare Pers.

Antigua, alt. 1520 m. (5066 ft., Depart. Sacatepéquez, Guatemala, Central America. February 8, 1907.

W. A. Kellerman, No. 6074.

Apparently not common in Guatemala; found in only one locality — a few plants in the court of the hotel "El Manchen," at Antigua, these being seriously infected.

## 17. Puccinia tetramerii Seymour

On Blechum brownei Juss.

Laguna (Lake Amatitlán), alt. 1200 m. (3950 ft.), Depart. Amatitlán, Guatemala, C. A. January 17, 1906.

W. A. Kellerman, No. 5400.

The host was determined by John Donnell Smith. The Rust was passed on by Frank D. Kern and Dr. Arthur. The type specimen of this species was collected in Oaxaca, Mexico, (issued in Pringle's Mexican Fungi, No. 9, Sept. 1, 1896), on leaves of Tetramerium aureum Rose.

## 18. Puccinia tithoniae Dietel & Holway

On Tithonia tubaeformis Cass.

Laguna (Lake Amatitlán), alt. 1200 m, (3950 ft), Depart. Amatitlán, Guatemala C. A. January 30, 1906.

W. A. Kellerman, No. 5425.

The Rust was determined by Frank D. Kern and Dr. Arthur, the host by John Donnell Smith. It seems to be common in Guatemala. It was originally collected in Mexico by E. W. D. Holway, on Tithonia tubaeformis and T. tagetiflora. The authors of the species remark that it is much like P. helianthi Schw., but the spores are darker, average smaller, and the septum is less thickened at the sides.

## 19. Uredo biocellata Arthur

On Pluchea odorata Cass.

Amatitlán, alt. 1200 m. (3950 ft.), Depart. Amatitlán, Guatemala,
Central America. January 25, 1906.

W. A. Kellerman, No. 5388.

The Rust was determined by Frank D. Kern and Dr. Arthur, and the host by J. M. Greenman. Mr. Kern says: The sides of the spore in this species are inflated in a very conspicuous manner making them unusually odd. It has been known before only from the type locality, Florida Keys, on Pluchea purpurascens.

## 20. Uredo trixitis Kern & Kellerman

On Trixis frutescens P. Br.

San Lucas (Toliman), alt. 1515 m. (5050 ft.), Depart. Solalá,
Guatemala, Central America. February 15, 1906.

W. A. Kellerman, No. 5432.

Mr. Frank D. Kern states: This host was determined by J. M. Greenman and belongs to a section of the *Carduaceae* which does not include any other genera known to bear rusts.

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# THE PHALLOIDEAE OF TEXAS.

BY WILLIAM H. LONG.

The fall of 1902 was unusually wet for this State and cold weather was late in coming, as our first good frost did not occur until Nov. 22. Such climatic conditions brought forth a wealth of fungi; the Basidiomycetes and Gastromycetes being especially abundant. It was the good fortune of the writer to collect and have photographed five species of that unique and interesting group of Gastromycetes — the *Phalloids.*

He was especially fortunate in securing an abundance of eggs, expanded plants, etc., of two species, thereby making possible a study of the variations that occur in a given species. The habitats of these plants are much the same, at least for four out of the five species collected. They require a soil loose enough so that the eggs can form readily, and it must be fairly rich in decaying vegetable matter and usually *not shaded.*

In an old sandy field, that had not been ploughed for seven or eight months, four species were found, viz: *Mutinus caninus, Phallus rubicundus, Phallus impudicus* var. *imperialis*, and *Simblum sphaerocephalum.* This field was on the north slope of